

Page 1

Friday, July 08, 2016 2:47:48 PM

Item ID: D5354-042 - 2

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: R66 Fwd Clamp Assembly, RH

Start Date: 7/8/2016 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 7/22/2016 **Req'd Qty:** 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: 21 Date: JUL 08 2015 Tooling: _____ Date: _____
 QC: 9-89 Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D5354	B

100

0.01

100

BAND SAW

Bandsaw

Memo

0.01

Jeaspa Bandsaw

Cut Blanks at 4.250"

B. = 16/07/12

1 0 08 9-89

110

0.01

110

HAAS CNC VERTICAL MACHINING #1

HAAS 5AXIS

Memo

0.06

HAAS CNC vertical machine #5

1-Machine per folio FB436 (D5354-2)

DWG REV: B

FOLIO REV: AD

D. = 16/07/12

1 0

DAS
08
9-89

2- deburr and break all sharp edge as per dwg

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
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Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval																		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐				Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐				Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐				Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐											
		OTHER :																							

Work Order ID 148832***148832***

Page 2

Friday, July 08, 2016 2:47:48 PM

Item ID: D5354-042

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: R66 Fwd Clamp Assembly, RH

Start Date: 7/8/2016 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 7/22/2016 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC-2 Inspection performed by CMM	0.01							
120									
QC	Memo	0.03							
Quality Control	Inspect on CMM as per folio CMMA039. DWG REV: _____ CMM PROG. REV: _____								
130	QC8- Inspect parts - second check	0.00							
130									
QC	Memo	0.00							
Quality Control									
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
140									
Outsource4	Memo	12.00							
Outsource process - Anodize	Issue P/O to ATG : _____ Black Anodize as per Dwg D5354 Certification of Conformity is required.								

Not required for
testing. Pls see
Attach e-mail AFS 10/07/08

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
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		OTHER :																							

Work Order ID 148832***148832***

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Friday, July 08, 2016 2:47:48 PM

Item ID: D5354-042

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: R66 Fwd Clamp Assembly, RH

Start Date: 7/8/2016 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 7/22/2016 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150	Receive & Inspect for Damage & Mat'l Certs	0.00							
-----	--	------	--	--	--	--	--	--	--

150

Packaging

Packaging

Memo

Certification of Conformity is required.

0.00

155

QC5- Inspect part completeness to step on W/O

0.00

155

QC

Quality Control

Memo

0.00

DAS

9

9-89

① 16-07-13

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			

Work Order ID 148832***148832***

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Item ID: D5354-042

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: R66 Fwd Clamp Assembly, RH

Start Date: 7/8/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 7/22/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamps

160

0.01

160

Small Fab

Small Fab

Memo

-Assemble as per dwg.

-Secure nuts as per dwg. (Note #8)

-Apply proseal as per dwg.

Batch: _____

Exp. date: _____

0.03

DAS
9
9-89

170

0.00

170

QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 148832***148832***

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Friday, July 08, 2016 2:47:48 PM

Item ID: D5354-042 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: R66 Fwd Clamp Assembly, RH
Start Date: 7/8/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/22/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	Identify as per dwg & Stock Location: <i>Prekm</i>	0.00							DAS 9 9-89
180									
Packaging	Memo	0.00							
Packaging									
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.02							
Quality Control									

U 16-07-20

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

Picklist Print

Friday, July 08, 2016 2:47:52 PM

Page 1

Work Order ID: 148832

148832

Parent Item: D5354-042

D5354-042

Parent Item Name: R66 Fwd Clamp Assembly, RH

Start Date: 7/8/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV.A New issue 16/07/08 JFS Verified by: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B1.250X04.50 0		Purchased	No			100	f	15.3500	0.354	0.372632			

M6061T6B1 250X04 500

6061-T6 Bar 1.25 X 4.50

B.A 16/07/12

Location

Loc Qty

Loc Code

MAT004

15.35

→ m133038

3.35

m134776

12

0.3584

~~D5316-1~~

Manufactured No

160

Each

0.0000

1

D5316-1

~~T-Bolt Strap~~

~~D5351-1~~

Manufactured No

160

Each

5.0000

2

2

D5351-1

~~T-Bolt Spacer~~

Location

Loc Qty

Loc Code

prelim

5

140611

5

*Not required.
pls see attach e-mail
JFS 16/07/08*

DQA: _____ Date: _____



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Misidentified ☐	Past Due ☐																																																														

Picklist Print

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Page 2

Work Order ID: 148832

148832

Parent Item: D5354-042

D5354-042

Parent Item Name: R66 Fwd Clamp Assembly, RH

Start Date: 7/8/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

~~MS21043-3~~

Purchased

No

160

Each

1,152.000

2

2

MS21043-3

~~Nut~~

Location

Loc Qty

Loc Code

FG

80

103691

80

FP001

11

m130673

11

GA

237

m133990

237

OVER007

400

m135058

400

ST302

318

m134861

318

ST304

106

m131340

106

~~NAS1149D0332J~~

Purchased

No

160

Each

1,794.000

2

2

NAS1149D0332.J

~~Washer~~

Location

Loc Qty

Loc Code

CA

6

m129682

6

FP001

562

m134848

562

GA

987

m135046

987

ST264

239

m134502

6

m134738

233

Not required
pls. see attach e-mail
AFB
16/07/08

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Date :		Step #:		QTY Effective :			MRB (QS1042) Approval																		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
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		OTHER : ☐																							

DART AEROSPACE LTD		Work Order: 148837
Description: SUPPORT, RH		Part Number: D5354-2
Inspection Dwg: D5354 Rev: B		Page 1 of 1

INSPECTION SHEET

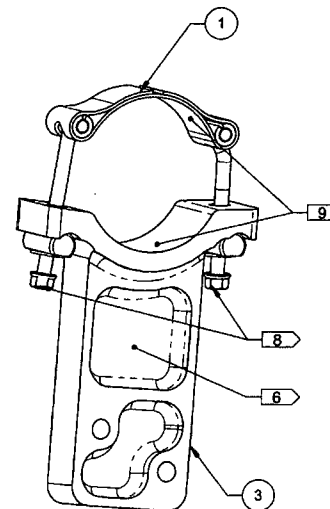
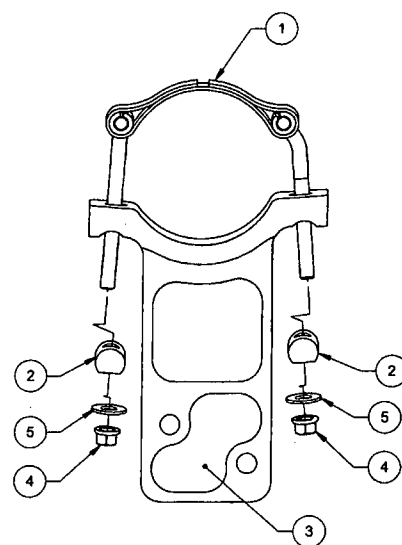
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.50	+/- .030	0.492	✓		Vern	GA-13
φ 0.204	+ .005 / - .001	φ 0.204	✓		"	"
0.20	+/- .030	0.200	✓		"	"
0.279	+/- .010	0.278	✓		"	"
R0.27	+/- .030	R0.281	✓		"	"
φ 0.257	+ .006 / - .001	φ 0.258	✓		"	"
1.28	+/- .030	1.277	✓		H-6	31006
0.13	+/- .030	0.125	✓		Mic	GA-03
R0.25	+/- .030	R0.250	✓		R-6	ref.
1.67	+/- .030	1.670	✓		Vern	GA-13
1.000	+/- .005	1.000	✓		H-6	31006
0.31	+/- .030	0.309	✓		Vern	GA-13
0.50	+/- .030	0.500	✓		"	"
0.500	+/- .005	0.500	✓		H-6	31006
0.15	+/- .030	0.148	✓		Vern	GA-13
0.13	+/- .030	0.128	✓		Mic	GA-03
R0.30	+/- .030	R0.297	✓		R-6	ref.
0.25	+/- .030	0.250	✓		Vern	GA-13
R0.13	+/- .030	R0.125	✓		GA	ref.
94.8°	+/- 1/2°	94.8°	✓		Angle M.	CNC-17
1.00	+/- .030	0.996	✓		Vern	GA-13
0.25	+/- .030	0.250	✓		"	"
R0.13	+/- .030	R0.125	✓		R-6	ref.
3.39	+/- .030	3.394	✓		H-6	31006
0.150	+ .015 / - .000	0.155	✓		D/G / Vern	GA-08 / GA-B
0.250	+/- .015	0.248	✓		"	"
0.65	+/- .030	0.649	✓		Vern	GA-13
0.92	+/- .030	0.922	✓		H-6	31006
0.14	+/- .030	0.139	✓		Vern	GA-13
0.40	+/- .030	0.395	✓		"	"
3.04	+/- .030	3.042	✓		"	"
R0.25	+/- .030	R0.250	✓		R-6	ref.

Measured by: D.A.	DAS 08 9-89	Checked by: JK	QC Inspector:
Date: 16/07/12		Date: 16-7-13	Date:

Engineering Approval: (If necessary)	Date:
--	--------------

Rev: Date: Change:

ITEM	QTY	P/N	DESCRIPTION
	X	D5354-041	R66 FWD CLAMP ASSY, LH
1	1	D5316-1	T-BOLT STRAP
2	2	D5351-1	T-BOLT SPACER
3	1	D5354-1	SUPPORT, LH
4	2	MS21043-3	NUT, SELF-LOCKING
5	2	NAS1149D0332J	WASHER
6	A/R	PROSEAL 890	SEALANT



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 148832 MJS
16-07-08

D5354-041 R66 FWD CLAMP ASSY, LH

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.37 lbs
- 8) SECURE NUTS WITH 1-2 THREAD AS SHOWN
- 9) APPLY AN EVEN LAYER OF PROSEAL 890 (0.02" - 0.03" THICK) ON INSIDE SURFACE

RELEASED
2016-06-29
ECN 16-579

APPROVED

B	REDESIGN -1/-041, ADD -2/-042, REMOVE -043 (ZN A5-1, A5-2, A5-3, A5-4); ADD NOTE 9 (ZN A8-1, A8-2)	RF	16.05.24
A	NEW ISSUE	RF	15.08.10
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	VS	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5354	SHEET 1 OF 4
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	R66 FWD CLAMP ASSEMBLY	NTS
DATE	16.05.24	COPYRIGHT © 2015 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____



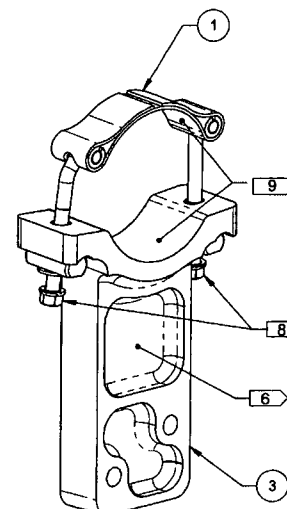
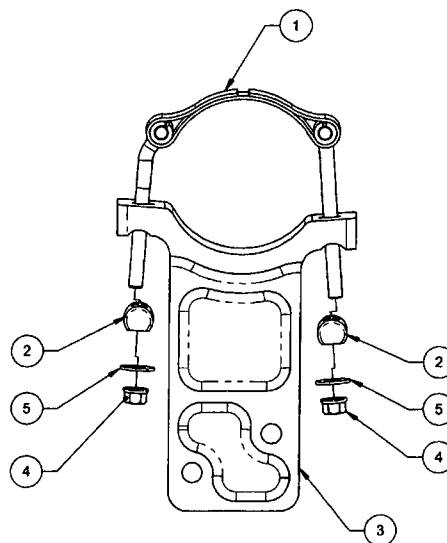
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

ITEM	QTY -042	P/N	DESCRIPTION
	X	D5354-042	R66 FWD CLAMP ASSY, RH
1	1	D5316-1	T-BOLT STRAP
2	2	D5351-1	T-BOLT SPACER
3	1	D5354-2	SUPPORT, RH
4	2	MS21043-3	NUT, SELF-LOCKING
5	2	NAS1149D0332J	WASHER
6	A/R	PROSEAL 890	SEALANT



D5354-042 R66 FWD CLAMP ASSY, RH

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.37 lbs
- 8) SECURE NUTS WITH 1-2 THREAD AS SHOWN
- 9) APPLY AN EVEN LAYER OF PROSEAL 890 (0.02"-0.03" THICK) ON INSIDE SURFACE

RELEASED
2016-06-29

APPROVED
Ch

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VS	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5354	SHEET 2 OF 4
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	R66 FWD CLAMP ASSEMBLY	NTS
DATE	16.05.24	COPYRIGHT © 2015 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

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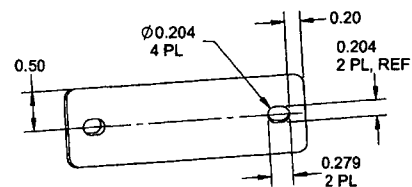


WORK ORDER NON-CONFORMANCE / UPDATE

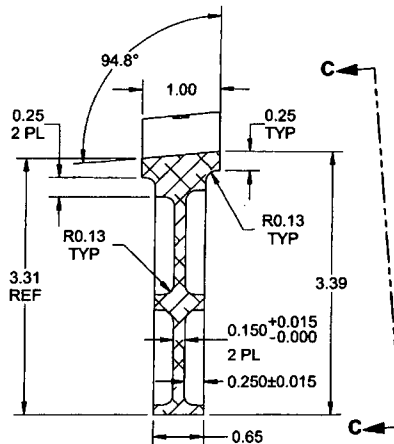
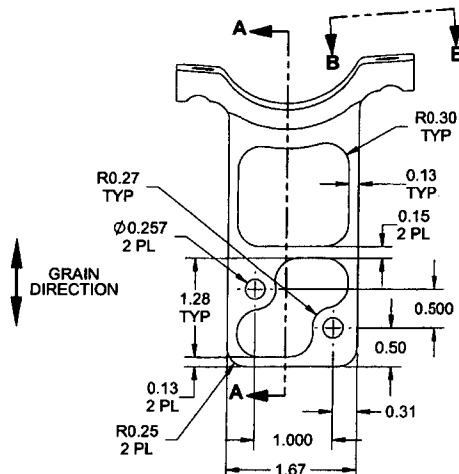
QA Closed: _____ Date: _____

Work Order update only ☐

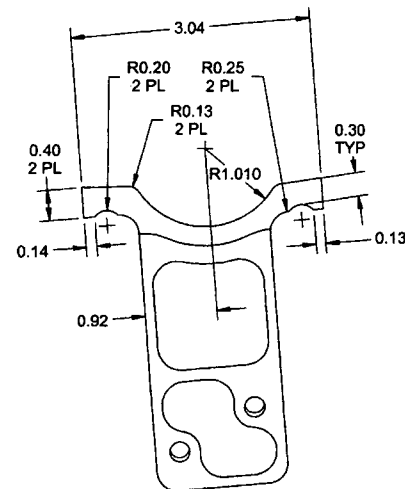
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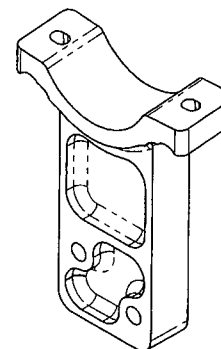
**VIEW B-B
(TYPICAL)**



SECTION A-A



VIEW C-C



D5354-1 SUPPORT, LH

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.29 lbs
- 8) UNDEFINED FEATURES CONTROLLED BY CAD FILE D5354-1 Rev. B.SLDPR

RELEASED
2016-06-29

APPROVED

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VS	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5354	SHEET 3 OF 4
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	R66 FWD CLAMP ASSEMBLY	NTS
DATE	16.05.24	COPYRIGHT © 2015 BY DART AEROSPACE LTD	
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DQA: _____ Date: _____

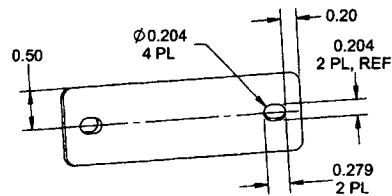


WORK ORDER NON-CONFORMANCE / UPDATE

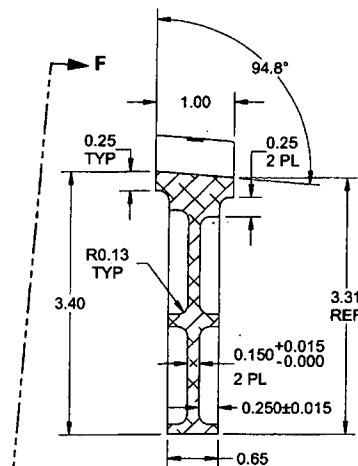
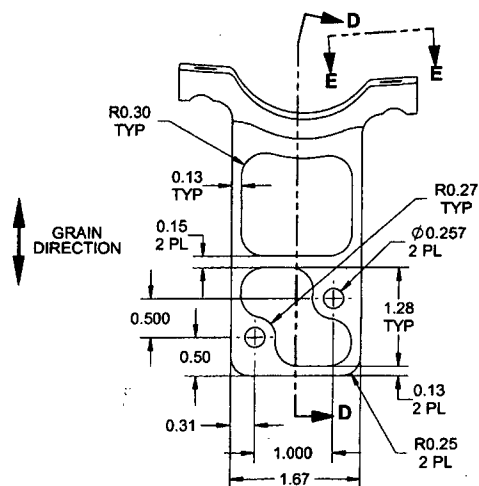
QA Closed: _____ Date: _____

Work Order update only ☐

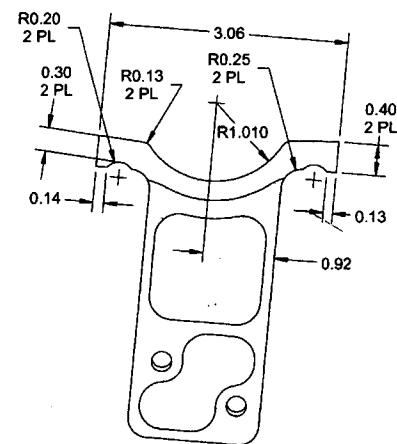
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							



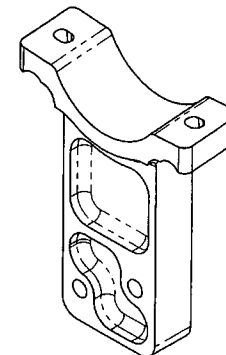
VIEW E-E
(TYPICAL)



SECTION D-D



VIEW F-F



D5354-2 SUPPORT, RH

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.29 lbs
- 8) UNDEFINED FEATURES CONTROLLED BY CAD FILE D5354-2 Rev. B.SLDPRT

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2016-06-29

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DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VS	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5354	SHEET 4 OF 4
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	R66 FWD CLAMP ASSEMBLY	NTS
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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td style="border: none;"></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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Jean Francois Sauve

From: Jean-Luc Menard
Sent: July-08-16 2:34 PM
To: Jean Francois Sauve
Subject: FW: R66 Basket Parts Required

From: David Shepherd
Sent: Friday, July 01, 2016 4:19 PM
To: Jean-Luc Menard <jmenard@dartaero.com>; Denis Maranda <dmaranda@dartaero.com>; Linda Lacelle <llacelle@dartaero.com>
Cc: Harvey Siemens <hsiemens@dartaero.com>; Bill Beckett <bbeckett@dartaero.com>; Kim Johnston <kjohnston@dartaero.com>; Roberto Fuentes <rfuentes@dartaero.com>; Patrick Smith <psmith@dartaero.com>
Subject: RE: R66 Basket Parts Required

JL,

Your questions are probably better answered by the Program Manager (Harvey), but my take is it would be acceptable to ship all parts together at the end of July/early August.

Since this project has been deemed "nice to have" by Sales & Mktg, a 4 week turnaround for these parts seems very reasonable to me.

Regards,
David

From: Jean-Luc Menard
Sent: June-29-16 7:28 AM
To: David Shepherd <dshepherd@dartaero.com>; Denis Maranda <dmaranda@dartaero.com>; Linda Lacelle <llacelle@dartaero.com>
Cc: Harvey Siemens <hsiemens@dartaero.com>; Bill Beckett <bbeckett@dartaero.com>; Kim Johnston <kjohnston@dartaero.com>; Roberto Fuentes <rfuentes@dartaero.com>; Patrick Smith <psmith@dartaero.com>
Subject: RE: R66 Basket Parts Required

Hi David,

We will start programing the parts Monday,beams will be cut next week.

As mentioned in last weeks e-mail(attached),we should have some results for the d5445 bent beams mid next week,at that point Roberto can decide if what we end up with is acceptable or not.

Due to vacation times and the flood of work this week,I would say 1st of August the partswill be in Calgary.

Some parts will be ready prior to that week,did you guys want everything at the same time or did you want us to ship whatever is ready as we manufacture them?

Let me know,

JL

From: David Shepherd
Sent: Monday, June 27, 2016 12:33 PM
To: Denis Maranda <dmaranda@dartaero.com>; Linda Lacelle <llacelle@dartaero.com>; Jean-Luc Menard <jmenard@dartaero.com>

Cc: Harvey Siemens <hsiemens@dartaero.com>; Bill Beckett <bbeckett@dartaero.com>; Kim Johnston <kjohnston@dartaero.com>; Roberto Fuentes <rfuentes@dartaero.com>; Patrick Smith <psmith@dartaero.com>
Subject: R66 Basket Parts Required

All,

While Harvey was on holiday, I worked with Roberto to try to move the R66 basket project forward.

The following drawings have recently been approved in the Vault and are on their way to Hawkesbury with ECN 16-579 for processing :

- 1) D5350 Rev B (R66 Beam Assy)
- 2) D5354 Rev B (R66 Fwd Clamp Assy)
- 3) D5355 Rev B (R66 Aft Clamp Assy)
- 4) D5445 Rev A (Cross Beam Assy)

To re-do the structural test, Roberto would like the following parts in Calgary:

Qty	Part Number	Notes
1	D5445-041	Powder Coat not required, D5445-043 End Caps not required
1	D5445-042	Powder Coat not required, D5445-043 End Caps not required
1	D5350-1	Powder Coat not required, Drill 0.375 holes to 0.257, OK to cut on waterjet
1	D5350-3	Powder Coat not required, Drill 0.375 holes to 0.257, OK to cut on waterjet
1	D5354-1	Anodize not required
1	D5354-2	Anodize not required
2	D5355-1	Anodize not required

Please provide us with a date as to when we can have these parts in Calgary so that we can resume our testing. We will need to receive the parts with a signed Conformity Inspection Record. We will send the draft Conformity Inspection Record closer to the parts being ready for shipping.

David (Roberto's scribe)